

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Peter THURMANN et al.

Serial No.: 10/699,229

Filed: October 31, 2003

For: Piston-Cylinder Unit



Examiner: Schwartz, C. P.
Group Art: 3683

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Thomas C. Pontani

Name of applicant, assignee or Registered Representative

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REPLY BRIEF

SIR:

This Reply Brief is being filed under 37 C.F.R. §41.41 to address arguments presented in the Supplemental Examiner's Answer mailed on March 2, 2006.

The Examiner states that the Appeal Brief filed on July 11, 2005 (Brief) does not contain a statement identifying the related appeals and interferences. The Examiner's attention is respectfully directed to page 2 of the Brief clearly stating that there are no related appeals and interferences.

In section 12 of the Examiner's Answer, it is stated that "Freitag et al. shows a pneumatic spring having an insulating sleeve at 10 and a *similar* sleeve at 36 which extends into the gap". (emphasis added) Applicants respectfully disagree with the Examiner's term "similar." Freitag does not teach that coating 10 and sleeve 36 are *similar*. Structurally, sleeve 36 is spaced from heat-shrink coating 10, and, functionally, sleeve 36 is an electrical insulator which "may be a bellows." See Freitag, col. 3, lines 22-25. Furthermore, sleeve 36 is displaceable relative to cylindrical member 1 and, thus, relative to coating 10, as is taught by Freitag incorporating the relevant teaching of U.S. Patent 3,919,509 (Schnitzius). See Freitag, col. 1, lines 47-48. In the extended

position of piston 2, sleeve 36 is spaced from this gap. Thus, sleeve 36 cannot prevent moisture from entering into the gap between cylindrical member 1 and piston 2 and further from flowing between coating 10 and cylindrical member 1. Consequently, Freitag does not teach the following:

shrink-heat sleeve surrounding said pressure tube and axially
extending into said ring-shaped gap, enclosing said end face,
as recited in claim 1 of the present invention.

The Examiner cites Kaufmann in the attempt to compensate for the above-discussed deficiencies of Freitag. Kaufmann teaches a shrink-wrap sleeve 22 that has one portion 24 surrounding a piston 14 and the other portion wrapped around a cylinder 12. The portion 24 of sleeve 22 extends axially outwards from the cylinder's end face and, thus, does not enclose the latter. Since sleeve portion 24 is not a seal, the moisture accumulated on piston 14 may enter the gap between sleeve portion 24 and piston 14 and penetrate into a space between sleeve 22 and cylinder 12.

In contrast, claim 1 of the invention recites that a heat-shrink sleeve encloses an end face of a cylinder by extending axially inwardly from the cylinder's end. In other words, the cylinder's end face is surrounded by the inventive sleeve. As a consequence, even if moisture penetrates a gap between piston 5 and cylinder 9 of the invention, it will be blocked from entering the space between sleeve 8 and cylinder 9.

The combination of Freitag and Kaufmann as suggested by the Examiner cannot yield a structure in which a heat-shrink sleeve encloses an end face of a cylinder, as recited in claim 1 of the invention, because neither of the cited references teaches that an end portion of a heat-shrink sleeve extends axially inwards from the cylinder's end. Even if it were possible to modify Freitag by utilizing the suggestion of Kaufmann which would allow sleeve 36 and coating 10 of Freitag to be coupled, moisture still would penetrate through a space between sleeve 36 and piston 2 into the gap between the piston and the cylinder. Once inside the gap, moisture will enter the space between the sleeve and the cylinder. Such a structure would contradict the claimed invention that is directed at preventing moisture from entering the space between the sleeve and the cylinder.

Furthermore, Freitag teaches that sleeve 36 moves along with piston 2. If one portion of the heat-shrink sleeve surrounding a cylinder is stationary, and the other portion of this sleeve is displaceable, the tensioned sleeve simply will be torn apart. Thus, coupling sleeve 36 and coating 10 of Freitag may lead only to a dysfunctional structure. Thus, the suggested combination is improper.

Accordingly, claim 1 and the rest of the appealed claims depending from claim 1 are patentable over the combination of Freitag and Kaufmann.

An Information Disclosure Statement (IDS) was filed on March 6, 2005, subsequent to the Supplemental Examiner's Answer dated March 2, 2006. Consideration of this IDS and an appropriate acknowledgement thereof are respectfully requested.

It is believed that no fees or charges are required at this time in connection with the present application. However, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,

COHEN, PONTANI, LIEBERMAN & PAVANE

By



Thomas C. Pontani
Reg. No. 29,763
551 Fifth Avenue, Suite 1210
New York, New York 10176
(212) 687-2770

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